

THE BREAD BOARD

OFFICIAL NEWLETTER OF THE
TIDEWATER 99/4 USER GROUP INC.
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DALLAS TI HOME COMPUTER
1221 MOSSWOOD
IRVING, TX 75061

*A Non-Profit Virginia Corporation
dedicated to educating and
enlightening TI-99/4 users
to the full potential
of home computing.*

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MEETING NOTICE: *The Southside Chapter meets every first and third Tuesday of each month at E.C.P.I. (Electronic Computer Programming Institute) located at 3661 East Virginia Beach Blvd. at Ingleside Ave. Educational classes start at 6:30 pm in room 206 followed by the regular meeting and discussion groups at 7:30 pm. For February, circle the 4th and 18th on your calendars for meeting nights.*

The Peninsula Chapter meets every second Tuesday of each month at Harwick High School, 51 Copeland Lane, Room 220-22. Formal meetings begin at 7:30 pm, with informal discussion before and after the meeting. Library is open to members during informal sessions. For February, the regular scheduled meeting is february 11th.

PUBLICATION NOTICE:

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NOTES FROM THE PRESIDENT:

I was particularly pleased at the success of the last meeting. We had an excellent presentation by Ken Woodcock on the building of the "Homebrew Module" mentioned in last month's newsletter. The attendance was 28 or maybe more. We signed up (collected dues from) 7 new members and had others interested. Thanks to all who helped with this, especially Ken for the show and Ken McLaurin for the excellent Newsletter which I am sure helped bring people to the meeting. Telephoning members a few days before the meeting may have also helped. In this regard I would like to activate a membership committee, which could take on this task as well as others to keep good attendance, which is so important to get presenters of interesting programs. See me at the February meeting if you can help.

I had hoped that those who bought into the Homebrew Module would be able to get a good start on it at the meeting. I now realize that because of time constraints on our occupancy of the room, this was unrealistic. Fortunately Judy North made the suggestion that we hold a Saturday workshop, which is just what we will do on February 1, 1986 from 9 a.m. to 12 noon at St. Stephen's Episcopal Church Parrish House, 372 Hiden Boulevard, Newport News as I announced before the end of the last meeting. All members are welcome even if you didn't buy into the package, maybe you can learn how amateurs can do some electronics work. The TI 9901's have finally arrived so all parts are here. If others want to build the "Homebrew" later, I will be glad to order the parts, or they can get together and do it themselves. TI's parts department has moved and has a new telephone number, which is (806) 741-3090.

Jim Trant

SECRETARY'S REPORT:

It was really great to see such a good turn out for our first meeting of 1986 on January 14 in which the attendance was 28. After a brief business meeting, Ken Woodcock, Vice President of the Southside 99er's, was introduced for the evenings program. His program was to describe and demonstrate how to construct a circuit that adds BK of battery/backed RAM to the Editor/Assembler module or "the construction of a homebrew module."

Ken first explained the basic workings of the TI 99/4A and what one can and can not do with the "homebrew" module. He handed out an instruction article and explained how to go about making your own "homebrew" module. It was suggested by Ken that the use of the game module "Toobstone City" (an expendable one of course) would be a good

module to use for the modification in that its circuitry agreed well with the instruction article.

Prior to the meeting, about twelve members had agreed to purchase some parts to participate in construction of their own individual module. There was not enough time to permit the actual constructions in the meeting, therefore, a workshop was set up for Saturday, Feb. 1, at 9:00 a. m. at St. Stephens Church in Hidenwood.

We want to thank Jim Trant for the time and trouble of contacting the members and ordering the materials for the construction of the "homebrew" modules. Also, we want to thank Ken for the very interesting program.

Looking forward to another good turnout to our next meeting (Feb. 11). Another good program is in line for us in that Judy North will give a demonstration of the TI ARTIST.

Earl Andrews

TREASURER'S REPORT:

Reported Last Month	\$53.97
Income	\$82.00
Expenditures	\$25.00

Total Cash on Hand	\$110.97

Brad Long

PEEKs and POKEs

I had already decided to write this column before the latest MICROpendium (Jan. '86) arrived. It contains a program similar to the one I'm presenting. However, I don't think it works as well, though I've only had a short time to play with it. Writers deadline.

Ironically, the program below is just a slightly modified version of one that appeared in the Nov. '85 issue of MICROpendium called "XB SCREEN COLOR", by Larry Bentley with modifications by John Behnke. Anyway, on with the topic.

That program "allows users to change screen and border colors" in the command mode. A rather peculiar program in my eyes. (And I couldn't get it to give the colors it was suppose to as written.) But upon examining it, I saw where it could be modified to allow you to set the screen and character colors to any desired in the command mode - a nice feature for people with color monitors who don't like the default of black on cyan, or those with monochrome monitors.

The program in the January issue seems less stable than mine, based on the little I've tested it. I've already discovered that CALL INIT locks up the

console.

My modified version of "XB SCREEN COLOR" seems to take more "abuse." Of course, the main purpose is to allow you to write programs while in the colors of your choice. It's not designed for running programs from.

Here's the program:

```

100 CALL CLEAR
110 INPUT "Screen Color" (
1-16)? "":S
120 INPUT "Character Color (
1-16)? "":C
130 X=16*(C-1)+(S-1)
140 CALL INIT :: CALL LOAD(9
984,X,X,X,X,X,X,X,X,2,0,7,15
+S,4,32,32)
150 CALL LOAD(9999,48,2,0,8,
0,2,1,39,0,2,2,0,8,4,32,32,3
6,2,0,8,8,4)
160 CALL LOAD(10021,32,32,36
2,0,8,16,4,32,32,36,2,0,8,2
4,4,32,32,38,4,91)
170 CALL LOAD(-31804,39,8)::
CALL CLEAR :: CALL LOAD(-31
952,255,231,255,231)
    
```

I've been using it for awhile now - all for the sake of science, since I prefer black on cyan. I've never had it return to the default colors while programming. Errors, NEW, CALL INIT, LOAD DSK1,FILENAME, etc. have had no affect on the new colors.

I've also run many programs, and usually the new colors remained. As long as you avoid programs that access A/L routines, you're probably safe. (And that doesn't mean some of them won't run all right.) Programs with graphics seem to run OK, you'll just get some unusual displays. But again, the main purpose is to provide a screen set up you like for writing programs. So while it's probably safe to test a program while in the new colors, save it first. Better safe than sorry!

If you have a specific color combination that you would prefer to use often, you can shorten the program just for that set up. For instance, if you prefer white characters on dark blue, then S=5, C=16 and X will equal 244. Delete lines 100 through 130, and in line 140 replace all the Xs with 244 and change 15+S to 20. You now have a little program that will quickly put you in your favorite color scheme.

Barry Ensley

PROGRAM NOTICE:

The January program will be presented by Judy North on TI ARTIST, a graphics software program by Chris Faherty, offering a truly useful, productive tool which is limited only by your own imagination! Don't miss this presentation which should surely be rewarding to us all.

NOTES FROM THE VICE PRESIDENT:

It seems I learned a lesson in modern business practices over the past month. It was a disappointment, and a lesson I'd sooner forget, but perhaps worthy of editorial comment.

I had asked you to act as "salespeople" for the group in obtaining new members and advertising. By way of follow-up on my own suggestion, I made some phone calls and wrote some letters and asked some of you if you had found my request reasonable and actually made an effort to comply. It seems the general attitude is that we live in a "dog eat dog" world that is especially true in the business market of competition. I asked if you supported the merchants who supported our group by placing ads in our publication, and if not, because you were loyal to a competitor, if you would inform your supplier that you were a member of a user group and ask for his support in the form of an ad in our newsletter. It seems some of us do not choose a product or a merchant from loyalty. We buy from whomever has the best price. And, the reason this party can sell for less, is that they don't spend a lot of money for advertisements in newsletters! I was impressed with Jim Peterson's letter on the subject. Our contact with Unisource, Bryan O'Neal also pointed out that after three months of advertising in our publication (and it's not just us) the results were disappointing. Perhaps I should be more of a realist and accept today's ideas that the commercials on TV are there to keep our kidneys functioning, bladder empty, and replace the empty bottles with full ones. Forget yesterday's adage of no such thing as a free lunch. I think (and hope) most of us look at advertisements as a way to keep informed of which suppliers offer competitive products and compare prices with competitors. On the bright side, we did get one response to the letters we sent out with a paid ad, this time from TENEX. See their ad with our own classified and look for their catalog soon.

In the October issue of the BREADBOARD we featured a graphics art (portrait of the Mona Lisa), using a program from Mr. Barry Traver. Mr. Traver now publishes a bimonthly magazine on disk called GENIAL TRAVELER. This was "plugged" in a recent TIPS FROM THE TIGERCUB insert (it was in fact--and quite by coincidence) included in the same October issue!

While I was not the first of our group to subscribe to Mr. Traver's publication, I want to be first to go on record (at least by sharing my enthusiasm with you in this editorial) as endorsing this new media. The first issue arrived with two disks, (one a bonus for charter subscribers) completely filled on both sides of the disk with programs and articles that any TI owner will enjoy. In addition to

Barry Traver, Mack McCormick, Jonathan Zittrain, Tom Weithofer, Todd Kaplan and Tom Kennedy are contributing authors. I have included (with permission) just one article from the first issue. While it was not perhaps the most interesting, it provided us--your staff of writers here on the BREADBOARD--with an answer to how to print in the newsletter, the results of our recent survey on our membership's interests, software, and hardware--a who has what directory. So now, when the article appears, you will all know exactly how it was done. For the rest of the goodies, you'll have to order your own. We will have subscription forms for you available at the February meeting.

Don Andrews

MAKE YOUR PRINTER PRINT SIDWAYS!!

by Tom Freeman

Have you ever wished that you could print text or tables sideways on the paper (that is, with the text reading vertically instead of horizontally)? The two programs included on this disk will enable you to do this on an Epson/Gemini compatible printer. The method uses the bitmap graphics mode of the printer.

First, the data statements must be created to give the printer the codes for each letter turned on its side. They can't be typed in because they are mostly control characters. The program below can be used to create a mergeable file for XB for all of them. The letters created will look exactly like the ones on your screen in immediate mode in BASIC (i.e. small letters are actually small caps) unless you put in CALL CHAR statements before line 100.

```

100 OPEN #1:"DSK3.DATAMERGE",VARIABLE
163
110 FOR X=1 TO 19 :: PRINT #1:CHR$(0);
CHR$(0);CHR$(15);CHR$(147);
120 FOR Y=1 TO 5 :: CALL CHARFAT(X*5+Y
+26,C$):: GOSUB 170 :: D$=""
130 FOR Z=8 TO 1 STEP -1 :: D$=D$&CHR$
(D(Z)):: NEXT Z
140 PRINT #1:CHR$(199);CHR$(8);D$;
150 IF Y=5 THEN PRINT #1:CHR$(0) ELSE
PRINT #1:CHR$(179);
160 NEXT Y :: NEXT X :: PRINT #1:CHR$
(255)&CHR$(255):: CLOSE #1 :: STOP
170 FOR Z=1 TO 8 :: E1$=SEG$(C$,2*Z-1,1)
:: E2$=SEG$(C$,2*Z,1)
180 F1=ASC(E1$)-48+7*(ASC(E1$)>60)
190 F2=ASC(E2$)-48+7*(ASC(E2$)>60)
200 D(Z)=F1#16#F2 :: NEXT Z :: RETURN
    
```

(The above program is called MAKE/DATA on the other side of the TRAVELER disk.)

Next the main program must be typed in - it's actually quite short!

```

100 DIM D$(126),A$(60):: FOR X=32 TO 126
:: READ D$(X):: NEXT X
110 ESC$=CHR$(27):: OPEN #2:"PIO.CR" ::
    
```

```

PRINT #2:ESC$&"A"&CHR$(7);ESC$;"C";
CHR$(0);CHR$(11);
120 FLAG=0 :: INPUT "TEXT FILE: DSK:F$
:: OPEN #1:"DSK"MF$
130 FOR X=1 TO 60 :: LINPUT #1:A$(X)::
IF EOF(1)THEN 150
140 NEXT X :: GOTO 170
150 FLAG=1 :: CLOSE #1 :: IF X=61 THEN
170
160 FOR X=X+1 TO 60 :: A$(X)=RPT$(" ",
80):: NEXT X
170 FOR X=1 TO 60 :: A$(X)=A$(X)&RPT$
(" ",80-LEN(A$(X))):: NEXT X :: FOR
X=1 TO 80 :: PRINT #2:ESC$&"K"&CHR$
(224)&CHR$(1)
180 FOR Y=60 TO 1 STEP -1 :: B$=SEG$(A$
(Y),X,1)
190 PRINT #2:D$(ASC(B$));
200 NEXT Y :: PRINT #2:CHR$(13)&CHR$(10)
:: NEXT X :: PRINT #2:CHR$(12):: IF FLAG
=0 THEN 130
210 INPUT "DO ANOTHER?(Y/N)";AN$ :: IF A
N$="Y" THEN 120 ELSE CLOSE #2
    
```

Note that in line 110 I have put in codes for 7/72 inch linefeeds, and a forafeed of 11 inches. Check your printer codes to make sure they are the same. To this program the file created by the previous program must be merged in by typing MERGE DSK1.DATAMERGE. This will put in 19 lines numbered from 5 to 95 in increments of 5, and if you list them they will look crazy. DON'T CHANGE THEM!! Now save the program under whatever name you wish, and it's ready to run.

This issue of TRAVELER contains two programs produced in this manner: not only a program which gives small caps for lower case (SIDENYS/SC) but also a program which gives the same characters as in the CHARA1 file for the TI-Writer (SIDENYS/CH). (Some minor changes exist in SIDENYS/SC and SIDENYS/CH on the disk in order to make the final programs more adaptable and user-friendly.)

The only limitation is that the file must contain only ASCII codes 32-126, that is, no control characters or deletes (127). You can ensure this by using the PF function of the TI-Writer and typing C DSK1.yourfile. Have fun.

Tom Freeman

Note also that if you are sure that the right margin of your file is always less than 80, you can substitute whatever it is for 80 in lines 160 and 170 (twice). You can also use this program to print an entire Multiplan listing lengthwise by using the print on disk option and always giving a margin of 80 or less.

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USING DATA BASE MANAGER by NAVARONE

by Ken Woodcock

While using the Navarone Data Base Manager, I have discovered some "tricks" that may be of use to others. Since each field is limited to 28 characters, I frequently find that I need to use a 2nd field as a continuation of another for longer items such as DESCRIPTION. The problem with this is that in the "REPORTS" section, two fields cannot be butted together. At least one space must be left between fields. This looks "unprofessional" when a word is split between two fields or when extra spaces were left at the end of the first field to avoid word splitting. The solution is to put a control character in that space between fields. (This practice is mentioned in paragraph 7.2.7 of the instruction manual but in very general terms.) The "trick" is to use a control character that has no meaning to your printer. I use CTRL A. This is entered by placing the cursor at the space between fields, pressing CTRL or FCTN period (.), then pressing SHIFT A. The result will be a capital A with a light colored background (I use a green screen monitor so I don't know the actual color). Now when the report is printed the two fields will be joined without a space.

Another problem was how to print more than 80 columns. The "REPORTS" editor only allows 80 columns but once again, this can be "tricked". The basic trick is to access your printer as PIO.CR (or RS232.CR) when asked. This requires the placement of a linefeed and carriage return at the appropriate place in the report text. Once again control characters are used. FCTN (or CTRL) .J for a linefeed and FCTN .M for a carriage return. To set my GEMINI 10X to condensed mode I use FCTN .O in the 1st header line.

The codes to set my printer to skip over perforation 3 lines from the bottom print condensed mode look like this:
CNCONHH

The keystrokes required are:

FCTN. FCTND. N FCTN. C FCTN.
H FCTN. H FCTN. H

Does anyone know how to change the colors? Some of them are not ideal for a green screen monitor.

I had been having some problems with the sort routine. According to the instructions, one should be able to sort a file on any field and either include or exclude records based on a "mask string". In other words: if you had a name and address file you should be able to get a sorted list of all who live in Virginia or all who do not live in Virginia by using "Virginia" as the mask string and

setting the marker to either be equal or not equal. Well, the "equal" part worked fine but I could not get the "not equal" mode to function properly (it always left out some records which should have been included). So I wrote to Navarone explaining, in as much detail as I thought necessary, my problem. Their reply was--we need more information--I was incensed!! How could anyone who had thoroughly tested this program, not have encountered the problem?

Controlling my irritation, (well, somewhat) I proceeded to use the demo file that Navarone includes with the program to illustrate my point. This time I mailed a disk which showed the problem I was having. Within a week I got my disk back along with a brief letter saying that several other customers had complained about the same problem; that they didn't have a solution and that they would inform their programming department for possible correction.

While I realize no program is perfect, I did expect a more positive response from a company that has produced high quality software for the TI-99 for several years. This was a major feature of this program and they seemed to pass it off as "Oh, well". I paid about \$60 for the program and I expected it to work as advertised.

CALL FILES ()

We published this information one time before, but apparently the word hasn't gotten around because I still see articles advising us to add lines to IBASIC programs that are in the 45-50 sector range to make them too big to save in "program" format. They will then be saved in INTERNAL/VARIABLE 254 format and will not require "CALL FILES (1)" to be executed before they can be loaded. The program "12THRAG" that Joe put on the bulletin board is a good example. Well, you don't have to add anything to the program. Just type CALL FILES (1) ("NEW" is not necessary), then load the program; then type CALL FILES (3); then save the program. That's it! As simple as 1-2-3. Try it!!

NEW PRODUCTS--SUPER WIDGIT

(from the Wichita Area 99ers Newsletter)

The Osram Industries of Victoria B.C. is making plans to manufacture and market an inexpensive "SUPER WIDGIT". Initial plans are for a monster box holding up to 16 cartridges available from the "review module library" option on the title screen. No more troublesome switches. The software looks only for those modules with ROM or a combination of ROM and BRAM. Third party modules will not be accessed. The GPL system is

designed so that with this hardware, built in software will allow one cartridge to access the devices and calls in another module. This allows, for example, console basic to access all of the plugged in modules call routines and devices names at one time. Osram Industries can be accessed through the Victoria 99'er Users Group, 1369 Finlayson St., Victoria, British Columbia, v8t-2v5, Canada. No price has been set as yet.

MINI-MEMORY BATTERY REPLACEMENT

Since most Mini-Memory modules were built over 2 years ago, many are or soon will be in need of a battery replacement. A lithium battery identical to the original may be difficult to find. Radio Shack carries lithium batteries but not ones with solder tabs included. You could buy one of those and carefully solder wires on but then it would have to be taped up so that it wouldn't flop around and short to other components. A better choice is to get one with the solder tabs on. They are available from DIGI-KEY CORP> 701 Brooks Ave. South, Thief River Falls, Minn. 56701 The part number is P142 and they are \$2.47 each. If you prefer, you can get a battery holder part # BH906-ND \$1.25 and a regular battery part # P135 \$1.73. Then the next time the battery gets weak you can just slip it out and a new one in.

TREASURER'S REPORT

Brought Forward from last Report \$502.86
Income (Dues) 130.00
Expenditures: (Library disks) . . -18.00
(Newsletter postage & Printing) -75.56

Cash Balance on Hand. \$539.30

Dick Hanson

PROGRAM NOTICES

We want to express our appreciation for the continued use of the rooms furnished to us by ECPI, and urge our members to leave the room in the same condition as it was provided. Educational classes start at 6:30 p.m. in room 206, followed by regular meeting and discussion groups at 7:30. Hope to see you at each meeting to share your knowledge and experience as well as to show your support. New members are especially invited to talk to the old timers and receive their help. For the month of February, we continue with FORTH studies, using, "STARTING FORTH", by Leo Brody as our text reference for the first meeting (February 4th). For our second meeting (February 18th) we will begin a new series of studies and presentations with EXTENDED BASIC, which we will share the responsibility of preparing the presentations among our members. More about individual assignments on February 4th.

SCREEN SCROLL: JOHN BENNKE

This short assembly program will allow you to scroll your screen down instead of only up in X-Basic with 32k. By using a line such as:

Scroll down: DISPLAY AT(01,1):"Put what you want here to scroll"
 Scroll up: DISPLAY AT(24,1):"Put what you want here to scroll"

You then access the routine by using:

CALL LINK("SCROLL") or replace "SCROLL" by the name that you used it the program.

You may use this routine to scroll the message down. I have also added directions so that you may modify only 3 variables and make this routine selectively scroll only certain rows. This is very useful if you would like to have some fixed text (like the score of a game) and some text or graphics that scroll up or down the screen. A good example of this is a game I made called "The Haunted Mine" which uses two of these routines to scroll the mineshaft up and down while leaving your score fixed at the bottom of the screen. You can use the PRINT statement to scroll your screen down but that scrolls the entire screen and is not always desired. Oh, by the way, "The Haunted Mine" is in the group library. You may want to purchase this to see how I used the routines. With a little practice you will be able to have your screen scroll anyway you want and I am sure you will find this routine very useful.

Note: For this example, VAR1,VAR2,VAR3 are not needed in the actual assembly source code. They are only there to simplify my reference to the program. When I refer to VAR1,VAR2, and VAR3, I am actually referring to the number after the comma in that line. In this program, therefore, VAR1=0, VAR2=767, and VAR3=32. If you have any questions, just ask me at the meeting or leave me a message on any of the TI Bulletin Boards.

Also: Only type in the lines between the //

```

*****
*
* Screen Scroll Routine *
* For X-Basic 32k *
*Use CALL LINK("SCROLL")*
*****
    
```

```

DEF SCROLL Name of routine. (You may change this)
EQU >83E0 Address of GROM Workspace pointer
STATUS EQU >837C Address of Status Byte
VMBW EQU >2024 X-Basic VDP Multiple Byte Write routine
VMBR EQU >202C X-Basic VDP Multiple Byte Read routine
SCROLL Start of program. If you change the name
in the first line, change it here also.
VAR1 LI R0,0 * SEE TABLE #1
LI R1,10000 Address in RAM (32k) to save screen
VAR2 LI R2,735 * SEE TABLE #2
BLWP 6VMBR Reads the screen into RAM
    
```

```

LI R0,32 * SEE TABLE #3 *
BLWP 6VMBW Writes the screen to VDP (scrolls it)

CLR R0
MOVW R0,@STATUS These four lines are needed to return to
LMP1-6PLWS X-Basic
B @>0070
    
```

```

END Tells the assembler to stop assembling
////////////////////////////////////////////////////////////////
    
```

Table #1

The number after R0 refers to the screen address that we want to start reading at. I have this set now for 0. That means that the program will start the scroll at screen position 0. Here is a chart that has the screen position numbers for the left side of the screen.

Row #	Position	Row #	Position
1	000	13	384
2	032	14	416
3	064	15	448
4	096	16	480
5	128	17	512
6	160	28	544
7	192	29	576
8	224	20	608
9	256	21	640
10	288	22	672
11	320	23	704
12	352	24	736

Table #2

VAR2 is the number of characters to scroll. You may get this number by first taking the last row you want to scroll, take its left side screen position, and subtract 1 from it. Take this and subtract VAR1 from it.

Formula:
 VAR2=Last row numbers position-1-VAR1

Example: First Row = 1
 Last Row = 9 VAR2=256-1-0
 VAR1 = 0

* These numbers will scroll rows 1 thru 9 *

Table #3

This number for VAR3 will be VAR1+32 for the screen to scroll down or VAR1-32 for the screen to scroll up. For example: If VAR1=32 then VAR3 will be 64 if we want the screen to scroll down and 0 for the screen to scroll up.

Now I will give a complete example. Say you want to scroll the screen down starting at row 4 and ending at row 16. You would then set VAR1 to 96, VAR2 to 383 (480-1-96) and VAR3 to 128 (96+32) to scroll down, or 64 (96-32) to scroll up.

TIPS FROM THE TIGERCUB

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VOCABULARY AND READING
MUSICAL EDUCATION
KALEIDOSCOPES AND DISPLAYS

For descriptions of these send a dollar for my catalog!

I goofed again! if you tried the Quickloader in Tips #29 with a disk containing more than 20 programs, you may have already noticed that line 140 should go to 160, not 155.

Here's another Tigercub Challenge - can you run this and get these results?

```
>LIST
100 PRINT PJ
110 PRINT MAX
120 PRINT PJ
130 PRINT MAX
>RUN
0
0
3.141592654
```

* SYNTAX ERROR IN 130

Some of you sharp-eyed newsletter editors may have noticed that this text is being hyphenated to avoid some of those gaping blanks that occur when only a few long words will fit on a right-justified line. The only way that I have found to accomplish this is to set the TI-Writer right tab for the actual column width to be printed and then, whenever a word is hyphenated, backspace and replace the blanks on that line with carets, adding enough extra carets to justify the line - like this -

whenever^a^word^^is^^hyphen-

It helps to go into fixed mode with CTRL # when you are inserting extra carets.

When using this method, it is also necessary to set the paragraph indentation with IN # on the command line; if indentations are desired, they can be filled with caret signs, like this:

^^When using this method,

I am told that my old 3D Sprite Routine made it to the Golden Quickies section of CompuServe, so here is an updated version. I have found that sprites can be controlled much more easily (although not moved as rapidly) with CALL LOCATE, rather than turning them loose with CALL MOTION and then trying to catch up with them!

```
100 CALL CLEAR :: CALL SCREE
N(5):: FOR SET=2 TO 8 :: CAL
L COLOR(SET,8,5):: NEXT SET
:: DISPLAY AT(3,12):"3-D SPR
ITE DEMO"
110 DISPLAY AT(22,1):"BY TIG
ERCUB" :: CALL CHAR(40,"FF0
0101010101FF0101010101FF
FF0101010101FF0101010101
01FF")
120 CALL CHAR(36,RPT$( "F",64
)): CALL MAGNIFY(4):: FOR X
```

```
=2 TO 22 STEP 2 :: CALL SPRI
TE(0X,36,X/2+1-(X>7)-(X>13),
32*X+6,40+X*6):: NEXT X
130 S=1 :: CALL SPRITE(0S,40
,16,46,7):: FOR C=6 TO 42 ST
EP 2 :: CALL LOCATE(0S,46,C)
:: NEXT C :: FC=44 :: FR=46
:: Y=0
140 FOR C=FC TO FC+44 STEP 2
:: CALL LOCATE(0S,FR,C):: N
EXT C :: FC=FC+44 :: CALL SP
RITE(0S+2,40,16,FR,FC):: CAL
L DELSPRITE(0S):: TC=FC-32
150 FOR C=FC TO TC STEP -2 :
: CALL LOCATE(0S+2,FR,C):: N
EXT C :: TR=FR+34 :: FOR R=F
R TO TR STEP 2 :: CALL LOCAT
E(0S+2,R,TC):: NEXT R
160 CALL SPRITE(0S,40,16,TR,
TC):: CALL DELSPRITE(0S+2)::
FR=TR :: TR=FR-72 :: FOR R=
FR TO TR STEP -2 :: CALL LOC
ATE(0S,R,TC):: NEXT R
170 CALL SPRITE(0S+2,40,16,T
R,TC):: CALL DELSPRITE(0S)::
FR=TR :: TR=FR+38 :: FOR R=
FR TO TR STEP 2 :: CALL LOCA
TE(0S+2,R,TC):: NEXT R
180 Y=Y+1 :: IF Y=11 THEN CA
LL DELSPRITE(0S+2):: GOTO 13
0 ELSE S=S+2 :: FC=TC :: FR=
TR :: GOTO 140
```

Ian Swales in Belgium can write some of the most intricate routines, and pull them into the tightest knot. I had searched everywhere for a sorting routine for 2-dimensional arrays, and invented some ridiculous ones, before Ian sent me this jewel.

```
100 !DEMO of two-dimensional
sorting routine
110 !Set up array to be sort
ed
120 CALL CLEAR :: DIM A$(20,
4):: RANDOMIZE :: DEF I%=CHR
$(26+RND*65)
130 FOR J=1 TO 20 :: A$(J,1)
=X0&X0&X0 :: A$(J,2)=STR$(IN
T(100+RND*1)): A$(J,3)=X0&ST
R$(INT(10+RND)): A$(J,4)=IN
T(10+RND))&X0 :: NEXT J
140 INPUT "SORT BY?(1-4)":K
150 J=20 !2-dimensional arra
y sorting routine by Ian Swa
les
```

```

160 DIM Q(20):: FOR X=1 TO 2
  Q(X)=X :: NEXT X
170 M=0
180 FOR X=1 TO J-1 :: IF A$(
  Q(X),K)<=A$(Q(X+1),K) THEN 21
  0
190 M=-1
200 T=Q(X):: Q(X)=Q(X+1):: Q
  (X+1)=T
210 NEXT X
220 IF M THEN 170
230 FOR X=1 TO 20 :: FOR L=1
  TO 4 :: PRINT AS(D(X),L);"
  ";: NEXT L :: PRINT :: NEXT
  X :: GOTO 140

```

Did you ever need a routine that would accept either a string or a numeric value? Try this -

```

100 N=0 :: ON ERROR 110 :: A
  CCEPT M$ :: N=VAL(M$):: GOTO
  120
110 ON ERROR STOP :: RETURN
  120
120 ON (N=0)+2 GOTO 130,140
130 PRINT M$ :: GOTO 100
140 PRINT N :: GOTO 100

```

A useful tip from Stephen Shaw in England - if you have a long program which will run only in Basic, and which will load from disk with CALL FILES(1) but runs out of memory when you try to run it; and if you have the MiniMemory module -

Insert MiniMemory module, select Basic, enter CALL FILES(1), Enter NEW, enter OLD DSK1.(filename). When loaded, enter SAVE EXPNEM2. When SAVED, enter CALL LOAD(-31000,63,255), enter NEW, enter OLD EXPNEM2, and enter RUN. That is still a lot faster than loading a long program from tape!

Another reason for never using the default mode of so-called UPDATE when opening a file (without specifying INPUT or OUTPUT) is that you will get an I/O ERROR #1 if the file is write-protected.

Has anyone found a way to go from Extended Basic to Basic without losing the program in memory, or at least fouling it up?

CALL LOAD(-32116,4) has been published in many newsletters as a way to do this, but has anyone actually made it work?

If you are printing out of TI-Writer Editor, finish your letter with CTRL U, SHIFT L, CTRL U and when it is printed the paper will automatically feed to the top of the next sheet.

To make a note to yourself while programming, just type ! and whatever you want to make note of, then LIST "PID":!, and then type ! and enter to delete the line.

TI-Writer puts an extra space after every period that is followed by a space. If you don't want this extra space after abbreviations such as "Mr." or "St.", use a caret sign ^ instead of a space after the period. Mr.^Jones. But TI-Writer puts only one space after ? or ! so if you want two, put a caret after the symbol !^

One of the very best tips for this month comes from Paul A. Meadows, in the September 85 newsletter of T.I.N.S. (Nova Scotia, Canada) -

How to print up to 132 characters in a line (condensed print, of course) out of TI-Writer! Just prepare your file as usual but in line 0001 put formatter commands such as .LN 10;RM 132; IN +5;FI;AD . The Fill and Adjust are necessary, the Indent is up to you, as are the left and right margins - but notice that right margin set way over at 132? Now, instead of saving the

file with SF, type PF and then C DSK1.(filename) to print to the disk. This not only strips out the control C characters, it also erases the TI-Writer tab line that was applied to the last line of the file.

So now, with your printer opened and initialized for condensed print, go into the TI-Writer formatter mode and print your file!

I have made the following changes to my working copy of the Tigercub Menuloader. This sets up my Gemini printer to skip over the perforations and print full page width in elite print with a wide left margin for ring-binder punching. Other printers may need changes in these codes.

```

620 DISPLAY AT(12,1)ERASE AL
  L:"PRINTER? PID" :: ACCEPT A
  T(12,1)SIZE(-18):P$ :: GOSUB
  B 895 :: PP=3
840 DISPLAY AT(24,1):"PRINTE
  R NAME? PID" :: ACCEPT AT(24
  ,15)SIZE(-14):PP$ :: GOSUB B
  95 :: PRINT @2;SEG$(D$,1,4)&
  " - Diskname="&N$
895 OPEN @3:P$,VARIABLE 132
  :: PRINT @3;CHR$(27);"B";CHR
  $(2);CHR$(27);"M";CHR$(10);C
  HR$(27);"N";CHR$(6):: RETURN

```

I always keep a backup of everything, on the flipped side of another disk, and I often want to verify that the backup has everything that is on the master, and vice versa.

```

100 DISPLAY AT(3,6)ERASE ALL
  :TIGERCUB DOUBLECAT": : To
  compare the contents of": :
  "a disk with a backup." !by
  Jim Peterson
110 DISPLAY AT(12,1):"INSERT
  MASTER DISK": : "PRESS ENTER
  "

```

```

120 CALL KEY(0,K,S):: IF S=0
  THEN 120
130 DATA DF,DV,IF,IV,P
140 RESTORE :: FOR I=1 TO 5
  :: READ T$(I):: NEXT I
150 DIM F$(127):: OPEN @1:"D

```

```

SK1.".INPUT ,RELATIVE,INTERN
  AL :: INPUT @1:A$,J,K :: F
  $(0)=A$&" "&STR$(K)
160 X=X+1 :: INPUT @1:F$(X),
  I,J,K :: IF F$(X)="" THEN 17
  0 :: F$(X)=F$(X)&" "&T$(ABS(
  I)): GOTO 160
170 X=X-1 :: CLOSE @1 :: DIS
  PLAY AT(12,1)ERASE ALL:"REMO
  VE MASTER DISK": : "INSERT BA
  CKUP DISK": : "PRESS ENTER"
180 CALL KEY(0,K,S):: IF S=0
  THEN 100

```

```

190 OPEN @1:"DSK1.",INPUT ,R
  ELATIVE,INTERNAL :: INPUT @1
  :A$,J,K :: DISPLAY AT(1,1)
  ERASE ALL:F$(0):: DISPLAY A
  T(1,15):A$&" "&STR$(K);
200 Y=Y+1 :: R=R+1 :: GOSUB
  290 :: INPUT @1:A$,I,J,K ::
  IF A$="" THEN 260 :: K=A$&"
  "&T$(ABS(I))

```

```

210 IF K=F$(Y) THEN DISPLAY
  AT(R+1,1):F$(Y):: DISPLAY A
  T(R+1,15):K$:: GOTO 250
220 IF K<F$(Y) THEN DISPLAY
  AT(R+1,15):K$:: Y=Y-1 :: GO
  TO 250

```

```

230 DISPLAY AT(R+1,1):F$(Y);
  :: R=R+1 :: GOSUB 290 :: Y=Y
  +1

```

```

240 IF K=F$(Y) THEN 210 ELSE
  IF K<F$(Y) THEN 220 ELSE IF
  Y<X THEN 230 ELSE DISPLAY A
  T(R,15):K$;
250 GOTO 200

```

```

260 IF Y>X THEN 200
270 R=R+1 :: GOSUB 290 :: FO
  R J=Y TO X :: DISPLAY AT(R,1
  ):F$(J): R=R+1 :: GOSUB 290
  :: NEXT J

```

```

280 DISPLAY AT(24,1):" P
  RESS ANY KEY" :: CALL KEY(0,
  K,S): IF S=0 THEN 200 ELSE
  CLOSE @1 :: END

```

```

290 IF R<23 THEN RETURN
300 DISPLAY AT(24,1):"PRESS
  ANY KEY" :: DISPLAY AT(24,1)
  : " " :: CALL KEY(0,K,S):: IF
  S=0 THEN 300
310 CALL CLEAR :: R=1 :: RET
  URN

```

And that is just about

MEMORY FULL!

Jim Peterson

NOTES FROM ANONYMOUS: Having heard all my life about showers for a baby, and showers for the bride, I finally learned why they don't have a shower for the groom. It seems by the time he's ready for a wedding, he's all washed up, anyway.

<XX>

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